USKH
SHARED VISION. UNIFIED APPROACH.

August 6, 2009

Susan Poulsom
US EPA Region 10
1200 Sixth Street
Seattle, WA 98101

Subject: NPDES Permit Renewal Application, City of Plummer

Dear Ms. Poulsom:

USKH Inc., on behalf of the City of Plummer is submitting the attached NPDES permit renewal application for the City's wastewater treatment facilities. Also attached is a letter dated July 9, 2009, from Scott Fields, the Coeur d'Alene Tribe's Water Resources Officer, a copy of which you should have already received.

Please note that Mr. Fields letter essentially supports the proposed combination technology/water quality-based limits on the total phosphorus discharge. The water quality rationale is spelled out in Mr. Fields' letter.

If you have questions or comments, please address them to the city with a copy to me to expedite responses. I greatly appreciate your continued assistance as the City proceeds with upgrading it's wastewater treatment facilities. You can reach my by email at agay@uskh.com or by phone at (509)328-5139.

Sincerely,
USKH Inc.

Alan E. Gay, P.E., Associate
Project Manager

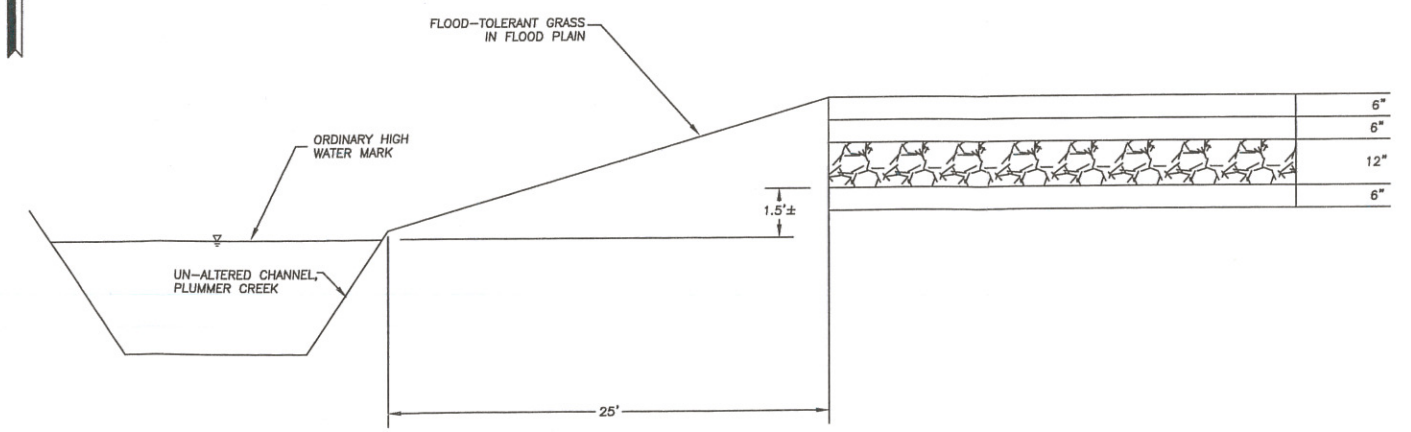
Attachments: NDPES Permit Renewal Application
July 9, 2009 Scott Fields Letter

C: Tim Clark, Mayor of Plummer, P.O. Box B, Plummer, ID 83851
Jim Kackman, Public Works Director, Coeur d'Alene Tribe, P.O. Box 408, Plummer, ID 83851
Gary Gaffney, DEQ, 2110 Ironwood Parkway, Coeur d'Alene, ID 83814
Jeff Beeman, USDA RD, 7830 Meadowlark Way, Ste C3, Coeur d'Alene, ID 83815

I:\1057200\Correspondence\Letter\1057200 Susan Poulsom Letter 07 29 2009.doc

N

NOT TO SCALE



1/— SECTION VIEW NTS

USKH
Engineering • Land Surveying
Planning • Architectural

Date:	05/09/2008
USKH W.O.	1057200
Scale:	NTS
CAD File:	
Drawn:	ALB
Checked:	AEG
FIGURE:	EX3

Sheet Title: PROPOSED WETLAND FILTER DISCHARGE

Project: PLUMMER WASTEWATER TREATMENT PLANT

Client: CITY OF PLUMMER, IDAHO

USKH INC.
UNWIN SCHEBEN KORYNTA HUETTL

ARCHITECTURE
ENGINEERING
LAND SURVEYING
PLANNING

WWW.USKH.COM

May 5, 2008

Jim Kackman
Planner
Coeur d' Alene Tribe
P.O. Box 408
Plummer, ID 83851

Subject: City of Plummer Wetland Filter Discharge

Dear Jim:

I appreciate the opportunity to meet with you on Tuesday, April 29th to discuss the proposed Wetland Filter Discharge. I've responded to the comments brought up during our discussion below and I've created a list of your suggestions from the meeting. My responses are in *italics.*

1. Choose a discharge location and an alternate location. *We have identified two locations for the wetland that can be seen on EX 3. The criteria for choosing the locations was that they had to have an elevation 3-feet above the high water mark and have enough space to adequately provide the discharge.*
2. Ensure the area is properly sized, complete with a fence. *The area is properly sized as is described in further detail in the attached narrative. Fencing will be added to ensure no one has access to the wetland.*
3. Superimpose the plan over an aerial photo. *The Wetland Filter Discharge location alternatives have been superimposed over an aerial photograph and are attached to this letter.*
4. Denote the overall length and width of the wetland. *The overall length and width of the wetland have been noted on the exhibit attached to this letter.*
5. Denote overland flow pattern with arrows showing flow patterns towards the creek. *Arrows noting the flow patterns have been added and are located on the exhibit attached to this letter.*
6. Show force main to discharge point in section and plan view. *The force main has been depicted on the exhibit in plan and section view.*
7. Use a 24" x 36" display sheet. *The exhibits have been printed on full size sheets and are attached to this letter.*
8. Provide a narrative describing the design. *A separate design narrative is attached to this letter.*

As indicated above, we are including a revised concept design that reflects our responses to your comments.

Sincerely,
USKH, Inc.

Alan E. Gay, P.E., Associate
Project Manager

Attachments: Revised Concept Design, Discharge Wetland (2 copies)
Plummer Discharge Wetland Design Narrative

c: Donna Spier, City of Plummer, P.O. Box B, Plummer, ID 83851
Susan Poulsom, USEPA Region 10, 1200 6th Avenue, Seattle, WA 98101
Gary Gaffney, IDEQ, 2110 Ironwood Parkway, Coeur d' Alene, ID 83814-2648

I:\1057200\Correspondence\Letter\1057200 CDA Tribe Narrative 050508.doc

Plummer Discharge Wetland Design Narrative

The wetland filter discharge was designed with the NPDES permit in mind. Currently, the NPDES permit for the City of Plummer only allows discharge to Plummer Creek during the summer months. With the wetland filter discharge, the wastewater treatment plant could discharge year round.

Note that the treatment plant does not discharge directly to the Creek with the proposed wetland filter discharge. The purpose of the new filter is to make the effluent flow through a wetland filter and also infiltrate into the ground. This would not create a creek flow during the summer that was composed solely of wastewater. Upon reaching the creek, the water will have been filtered and flowed overland through grasses. So, the flow reaching the creek will essentially be clean runoff water.

The first step in sizing the wetland filter discharge was to determine the soil types at the potential wetland site. The soil type is important because the infiltration rate of that particular soil has to be calculated. The infiltration rate is the rate at which the water will percolate through the soil. The wetland has to have a lower infiltration rate than the soil that it is constructed on. That way, the effluent from the plant will be forced through cleansing layers to remove suspended solids and nutrients.

Suspended solids are fine particles that are in water. An example is river water. If it is all shaken up, it is slightly dirty because of all the particles. If it sits for a little while, all of the particles settle out and the water becomes clear again. The discharge from the treatment plant will not be full of suspended solids like river or lake water, but it will still have some that need to be removed. When the water is discharged into the wetland, the sand and gravel act as a natural filter that remove more suspended solids from the water.

Nutrient removal is also an important aspect of the wetland. Nutrients are a good thing unless there is too much of them. Too many nutrients in the Creek can produce more vegetative growth, which drops the oxygen level in the water. When the oxygen level drops, then the fish can suffer. The wetland grasses will uptake the nutrients through their roots so the oxygen levels in the water remain constant.

The wetland size was determined by the amount of flow that will be discharged from the plant. The perforated pipe that will drain into the constructed wetland will have 1/4-inch holes every foot along the 220-foot length. The length and size of the holes were calculated using the peak discharge from the treatment facility. The perforated pipe will equally discharge the flow throughout the entire wetland.

The proposed wetland filter discharge will not be constructed in an existing wetland. The proposed wetland will be a man-made wetland located at least 25-feet away from the stream bank. There will be no direct pipe discharge to Plummer Creek.

The flow in Plummer Creek will not be made up of the treatment facility discharge. The purpose of the discharge wetland is for the effluent to filter through natural soil and rock filters before eventually making its' way to the Creek bank.

The proposed wetland will be constructed outside of the 100-year floodway, but not the flood plain.